

REMARKS

Claims 4 and 14 are currently being amended to obviate the Examiner's indefiniteness rejection, while new claims 16-18 are being added. Additionally, claims 1 and 15 are currently being amended to further particularly point out and distinctly claim what Applicant regards as the inventive subject matter.

These amendments do not introduce new matter within the meaning of 35 U.S.C. §132. Accordingly, the Examiner is respectfully requested to enter the amendments.

1. Rejection of Claim 4 and 13 Under 35 U.S.C. § 112, 2nd

Paragraph

The Office Action states claims 4 and 13 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Office Action states,

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation in claim 4 of 'exclusively' is not clear as to its inclusion either for the copolymer 'A)' or copolymer 'B)'.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the steps required to manufacture the product, whether it be an extrusion, mixing, etc..

RESPONSE

Applicant has amended claim 4 to obviate the current rejection.

Additionally, Applicant respectfully believes the Examiner meant to refer to claim 14 in the current rejection, and not claim 13. As such, Applicant has amended claim 14 to obviate the current rejection. Basis for the amendments can be found throughout Applicant's specification, and in particular on page 4, lines 1-20, and page 16, lines 25-30.

Accordingly, Applicant kindly requests the Examiner to withdraw the current rejection.

2. Rejection of Claims 1-5, 7, and 9-15 Under 35 U.S.C. §102(b)

The Office Action states claims 1-5, 7, and 9-15 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 5,773,516 (herein referred to as "Hüffer, et al."). In particular, the Office Action states,

The reference to Hüffer et al teaches the manufacture of a propylene copolymer composition having a first copolymer, 'containing from 0 to 15% by weight copolymerized C₂-C₂₀-alk-1-enes' which embraces the recited range at 0 to 10% by weight, with a second propylene copolymer, 'containing from 15 to 15% by weight copolymerized C₂-C₂₀-alk-1-enes' which embraces the recited range at 12 to 18% by weight, as recited in claims 1 and 2. Note the Abstract. The other monomer may be exclusively ethylene (claim 4). The range of inclusion of the first copolymer is taught to be '25 to 97 % by weight' and the second as '3 to 75% by weight' in the Abstract, which embraces that recited in claim 20 at 90 to 10, and 27 to 75. The production of 'films, fibers and moldings' is shown at column 1 (lines 32-34). Further, note column 6 (lines 24-31 and 62-67). Since the compositions are essentially identical to those claimed, the compositions would inherently possess the haze value range and brittle/tough transition temperature as recited

in claim 1. Nothing is recited that would indicate otherwise. Likewise, the composition would inherently possess the characteristics recited in claims 5 and 11. Again, nothing is recited or provided that would indicate otherwise.

RESPONSE

Applicant respectfully traverses the rejection of claims 1-5, 7, and 9-15.

For a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claims is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicant respectfully believes Hüffer, et al. fails to disclose, teach, or suggest, "A propylene copolymer composition comprising:

- A) a propylene polymer containing from 0 to 10% by weight of olefins other than propylene and
- B) at least one propylene copolymer containing from 12 to 18% by weight of olefins other than propylene,

where the propylene polymer A and the propylene copolymer B are present as separate phases, the weight ratio of propylene polymer A to the propylene copolymer B is from 80:20 to 60:40 and the propylene copolymer composition has a haze value of $\leq 30\%$, based on a path length of the propylene copolymer composition of 1 mm, and the brittle/tough transition temperature of the propylene copolymer composition is $\leq -15^{\circ}\text{C}$, and the propylene copolymer composition is obtained from a process comprising a metallocene compound."

First and foremost, Applicant respectfully notes the current Office Action states on page 4, line 9,

Since the compositions are **essentially identical** to those claimed. . . . (Emphasis added).

However, Applicant respectfully contends since the Examiner concedes Hüfner, et al. merely discloses essentially identical compositions, and not the same compositions (i.e., identical), Hüfner, et al. clearly cannot anticipate the currently pending claims under 35 U.S.C. §102. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), (Emphasis added). Accordingly, since the Examiner has employed the wrong legal standard for anticipation, for this reason alone Applicant respectfully believes the current rejection should be withdrawn.

Notwithstanding, as outlined in col. 1, lines 1-11, in Hüfner, et al.

The present invention relates to a propylene polymer

which comprises from 25 to 97% by weight of a propylene polymer (I) containing from 0 to 15% by weight of copolymerized C₂-C₁₀-alk-1-enes and also comprises from 3 to 75% by weight of a further propylene polymer (II) containing from 15 to 80% by weight of copolymerized C₂-C₁₀-alk-1-enes, obtainable by two-stage polymerization of propylene and C₂-C₁₀-alk-1-enes **in the presence of a Ziegler-Natta catalyst system. . . .** (Emphasis added)

However, as outlined in Applicant's specification on page 1, lines 18-26,

It is known that multiphase propylene copolymers having a good impact toughness, particularly at low temperatures, can be prepared by means of Ziegler-Natta catalyst systems in a multistage polymerization reaction. **However, the incorporation of ethylene-propylene copolymers having a high proportion of ethylene into a polymer matrix, which is necessary to increase the low-temperature impact toughness, makes the multiphase propylene copolymer turbid. Poor miscibility of the flexible phase with the polymer matrix leads to a separation of the phases and thus to turbidity and to poor transparency values of the heterogeneous copolymer. Furthermore, the ethylene-propylene rubber prepared by means of conventional Ziegler-Natta catalysts also has a very inhomogeneous composition.** (Emphasis added)

Additionally, on page 2, lines 18-38 of Applicant's specification,

It is an object of the present invention to overcome the above-described disadvantages of the prior art and to provide propylene copolymer compositions which have a combination of good impact toughness at low temperatures together with good transparency and good stress whitening behavior and also possess a relatively high melting point, a high stiffness and good heat distortion resistance in combination with low extractable contents, a homogeneous comonomer distribution and good organoleptics.

We have found that this object is achieved by propylene copolymer compositions comprising

A) a propylene polymer containing from 0 to 10% by weight of olefins other than propylene and

B) at least one propylene copolymer containing from 5 to 40% by weight of olefins other than propylene,

where the propylene polymer A and the propylene copolymer B are present as separate phases and the propylene copolymer compositions have a haze value of $\leq 30\%$, based on a path length of the propylene copolymer composition of 1 mm, and the brittle/tough transition temperature of the propylene copolymer composition is $\leq -15^{\circ}\text{C}$.

Moreover, on page 7, line 36 - page 8, line 3 of Applicant's specification,

The composition of the propylene copolymers B present in the propylene copolymer compositions of the present invention is preferably uniform. **This distinguishes them from conventional heterogeneous propylene copolymers which are polymerized using Ziegler-Natta catalysts, since the use of Ziegler-Natta catalysts results in blockwise incorporation of the comonomer into the propylene copolymer even at low comonomer concentrations, regardless of the polymerization process.** For the purposes of the present invention, the term 'incorporated blockwise' indicates that two or more comonomer units follow one another directly. (Emphasis added)

Accordingly, Applicant respectfully believes the current application solves the turbidity and poor transparency problems of propylene polymers obtained by using Ziegler-Natta catalyst systems, such as those disclosed in Hüffer, et al.

In light of the above, claims 1-18 are therefore believed to be patentable over Hüffer, et al. As such, reconsideration and withdrawal of the rejection is respectfully requested.

3. Rejection of Claims 1, 3-5, 7, and 10-15 Under 35 U.S.C.

§103(a)

The Office Action states that claims 1, 3-5, 7, and 10-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,511,755 (herein referred to as "Mochizuki, et al."). In particular, the Office Action states,

The patent to Mochizuki et al teaches the production of a propylene copolymer blend that may comprise a first copolymer having from 1.5 to 10% by weight comonomer, which may be ethylene, with a second copolymer embracing the olefin content, which may be ethylene, at 20 to 30 % by weight, as recited in claims 1 and 4. Note column 4 (line 51) to column 5 (line 25). That passage also shows manipulation of haze due to the presence of propylene, as recited in claim 1. Further, note column 12 (lines 37-45) in that regard, and the data in Tables 1 and 2. The range of inclusion for the two copolymers is shown at Table 7 to embrace those claimed herein. The manipulation of the molecular weight is shown at column 9 (lines 14-16). The process of claim 13 is shown at column 9 (lines 29 et seq.). The production of films is shown throughout the patent (claims 14 and 15). Although the reference is silent as regards the Brittle/tough transition temperature, stress whitening value (claim 5), glass transition temperature (claim 10) and shear viscosity (claim 11), a skilled artisan would have a high level of expectation of success following the teachings of the reference to achieve the claimed inventions.

RESPONSE

Applicant respectfully traverses the rejection of claims 1, 3-5, 7, and 10-15.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2)

ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

However, as with Hüffer, et al., Applicant respectfully believes Mochizuki, et al. fails to disclose, teach, or suggest, "A propylene copolymer composition comprising:

- A) a propylene polymer containing from 0 to 10% by weight of olefins other than propylene and
- B) at least one propylene copolymer containing from 12 to 18% by weight of olefins other than propylene,

where the propylene polymer A and the propylene copolymer B are present as separate phases, the weight ratio of propylene polymer A to the propylene copolymer B is from 80:20 to 60:40 and the propylene copolymer composition has a haze value of $\leq 30\%$, based on a path length of the propylene copolymer composition of 1 mm, and

the brittle/tough transition temperature of the propylene copolymer composition is $\leq -15^{\circ}\text{C}$, and the propylene copolymer composition is obtained from a process comprising a metallocene compound."

In particular, as outlined in col. 7, lines 10-43, in Mochizuki, et al.

The constituting characteristic of the method for the manufacture of the propylene composition used in the present invention is that a crystalline polypropylene is manufactured as the first stage in a gas phase in the presence of a stereoregular **catalyst comprising a solid catalyst component (A) containing titanium of a big particle size**, an organoaluminum compound (B) and an organosilicon compound (C) (the first polymerization step) and, as the second stage, a copolymer of propylene with α -olefin is continuously manufactured (the second polymerization step). With regard to the titanium-containing solid catalyst component (A) in the said manufacturing method, any known one may be used so far as it is a component **where a titanium compound is carried on an inorganic carrier such as magnesium compound, silica compound or alumina or on an organic carrier such as polystyrene or it is a component where such a carrier is, if necessary, made to react with an electron-donating compound such as ethers (e.g., 2-methyl-2-isobutyl-1,3-dimethoxypropane) and esters (e.g., di-n-butyl phthalate and diisobutyl phthalate).**

Thus, a titanium-containing solid catalyst component prepared by spraying an alcoholic solution of a magnesium compound, partially drying the said solid component and then by treating the said partially dried solid component with an electron-donating compound such as titanium halide or di-n-butyl phthalate (Japanese Patent Laid-Open No. 119,003/1991) and a titanium-containing solid catalyst component prepared by dissolving a magnesium compound in tetrahydrofuran/alcohol/electron donor and by treating a magnesium simple substance separated by a sole TiCl_4 or a combination of it with the said electron donor with titanium halide and the above-mentioned electron-donating compound (Japanese Patent Laid-Open No. 103,604/1992) may be exemplified. (Emphasis added)

However, as outlined in Applicant's specification on page 1, lines 18-26,

It is known that multiphase propylene copolymers having a good impact toughness, particularly at low temperatures, can be prepared by means of Ziegler-Natta catalyst systems in a multistage polymerization reaction. **However, the incorporation of ethylene-propylene copolymers having a high proportion of ethylene into a polymer matrix, which is necessary to increase the low-temperature impact toughness, makes the multiphase propylene copolymer turbid. Poor miscibility of the flexible phase with the polymer matrix leads to a separation of the phases and thus to turbidity and to poor transparency values of the heterogeneous copolymer. Furthermore, the ethylene-propylene rubber prepared by means of conventional Ziegler-Natta catalysts also has a very inhomogeneous composition.** (Emphasis added)

Additionally, on page 2, lines 18-38 of Applicant's specification,

It is an object of the present invention to overcome the above-described disadvantages of the prior art and to provide propylene copolymer compositions which have a combination of good impact toughness at low temperatures together with good transparency and good stress whitening behavior and also possess a relatively high melting point, a high stiffness and good heat distortion resistance in combination with low extractable contents, a homogeneous comonomer distribution and good organoleptics.

We have found that this object is achieved by propylene copolymer compositions comprising

- A) a propylene polymer containing from 0 to 10% by weight of olefins other than propylene and
- B) at least one propylene copolymer containing from 5 to 40% by weight of olefins other than propylene,

where the propylene polymer A and the propylene copolymer B are present as separate phases and the propylene copolymer compositions have a haze value of $\leq 30\%$, based on a path length of the propylene copolymer composition

of 1 mm, and the brittle/tough transition temperature of the propylene copolymer composition is $\leq -15^{\circ}\text{C}$.

Moreover, on page 7, line 36 - page 8, line 3 of Applicant's specification,

The composition of the propylene copolymers B present in the propylene copolymer compositions of the present invention is preferably uniform. **This distinguishes them from conventional heterogeneous propylene copolymers which are polymerized using Ziegler-Natta catalysts, since the use of Ziegler-Natta catalysts results in blockwise incorporation of the comonomer into the propylene copolymer even at low comonomer concentrations, regardless of the polymerization process.** For the purposes of the present invention, the term 'incorporated blockwise' indicates that two or more comonomer units follow one another directly. (Emphasis added)

Accordingly, as with Hüffer, et al., Applicant respectfully believes Mochizuki, et al. relates to polypropylene compositions obtained using Ziegler-Natta catalyst systems. As such, Applicant respectfully believes the current application solves the turbidity and poor transparency problems of polypropylene polymers obtained by using Ziegler-Natta catalyst systems, such as those disclosed in Mochizuki, et al.

In light of the above, claims 1-18 are therefore believed to be patentable over Mochizuki, et al. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

4. Rejection of Claims 1-5, 7, and 9-15 Under 35 U.S.C. §103(a)

The Office Action states claims 1-5, 7, and 9-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,586,528 (herein referred to as "Delaite, et al."). In particular, the Office Action states,

The patent to Delaite et al teaches the manufacture of a propylene copolymer blend that may comprise a first copolymer, present in the amounts of 55 to 74 parts, having 1% by weight ethylene or less (homopolymer, claim 2), with a second propylene copolymer, present in the amounts of 26 to 45 parts, having an ethylene content overlapping that claimed at 10 to 15% by weight, as recited in claims 1 and 4. The reference teaches the inclusion of nucleating agents at column 3 (lines 53-59), as in claim 9. The reference teaches the production of articles and films, as in claims 14 and 15. Note column 1 (lines 16-21). The process, as recited in claim 13, is shown at column 5 (lines 10 et seq.). Further, note column 4 (lines 65-67) and column 5 (lines 43-49) which teaches manipulation of the molecular weight and the molecular weight distribution, as in claims 12. Although the reference is silent as regards the Brittle/tough transition temperature, stress whitening value (claim 5), glass transition temperature (claim 10) and shear viscosity (claim 11), a skilled artisan would have a high level of expectation of success following the teachings of the reference to achieve the claimed inventions. As such, a skilled artisan would have a high level of expectation of success following the teachings of the reference to achieve the claimed inventions.

RESPONSE

Applicant respectfully traverses the rejection of claims 1-5, 7, and 9-15.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2)

ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

However, as with Hüfner, et al. and Mochizuki, et al., Applicant respectfully believes Delaite, et al. fails to disclose, teach, or suggest, "A propylene copolymer composition comprising:

- A) a propylene polymer containing from 0 to 10% by weight of olefins other than propylene and
- B) at least one propylene copolymer containing from 12 to 18% by weight of olefins other than propylene,

where the propylene polymer A and the propylene copolymer B are present as separate phases, the weight ratio of propylene polymer A to the propylene copolymer B is from 80:20 to 60:40 and the propylene copolymer composition has a haze value of $\leq 30\%$, based on a path length of the propylene copolymer composition of 1 mm, and

the brittle/tough transition temperature of the propylene copolymer composition is $\leq -15^{\circ}\text{C}$, and the propylene copolymer composition is obtained from a process comprising a metallocene compound."

In particular, as outlined in col. 4, lines 34-43, in Delaite, et al.,

Polymers (A) and (B) are preferably obtained by polymerization of propylene and, as the case may be, of ethylene by means of catalytic systems comprising a solid based on titanium trichloride, an alkylaluminum and optionally an electron donor. Particularly preferable catalytic systems of this type are described in European Patent Applications 0261727 and 0334411 and in U.S. Pat. No. 4,210,729 and 5,204,305 (Solvay Polyolefins Europe, Belgium), the entire contents of each of which are hereby incorporated by reference.

However, as outlined *supra*, in Applicant's specification on page 1, lines 18-26,

It is known that multiphase propylene copolymers having a good impact toughness, particularly at low temperatures, can be prepared by means of Ziegler-Natta catalyst systems in a multistage polymerization reaction. **However, the incorporation of ethylene-propylene copolymers having a high proportion of ethylene into a polymer matrix, which is necessary to increase the low-temperature impact toughness, makes the multiphase propylene copolymer turbid. Poor miscibility of the flexible phase with the polymer matrix leads to a separation of the phases and thus to turbidity and to poor transparency values of the heterogeneous copolymer. Furthermore, the ethylene-propylene rubber prepared by means of conventional Ziegler-Natta catalysts also has a very inhomogeneous composition.** (Emphasis added)

Additionally, on page 2, lines 18-38 of Applicant's specification,

It is an object of the present invention to overcome the above-described disadvantages of the prior art and to

provide propylene copolymer compositions which have a combination of good impact toughness at low temperatures together with good transparency and good stress whitening behavior and also possess a relatively high melting point, a high stiffness and good heat distortion resistance in combination with low extractable contents, a homogeneous comonomer distribution and good organoleptics.

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where the propylene polymer A and the propylene copolymer B are present as separate phases and the propylene copolymer compositions have a haze value of $\leq 30\%$, based on a path length of the propylene copolymer composition of 1 mm, and the brittle/tough transition temperature of the propylene copolymer composition is $\leq -15^{\circ}\text{C}$.

Moreover, on page 7, line 36 - page 8, line 3 of Applicant's specification,

The composition of the propylene copolymers B present in the propylene copolymer compositions of the present invention is preferably uniform. **This distinguishes them from conventional heterogeneous propylene copolymers which are polymerized using Ziegler-Natta catalysts, since the use of Ziegler-Natta catalysts results in blockwise incorporation of the comonomer into the propylene copolymer even at low comonomer concentrations, regardless of the polymerization process.** For the purposes of the present invention, the term 'incorporated blockwise' indicates that two or more comonomer units follow one another directly. (Emphasis added)

Accordingly, as with Hüffer, et al. and Mochizuki, et al., Applicant respectfully believes Delaite, et al. relates to propylene compositions obtained using Ziegler-Natta catalyst systems. As

such, Applicant respectfully believes the current application solves the turbidity and poor transparency problems of polypropylene polymers obtained by using Ziegler-Natta catalyst systems, such as those disclosed in Delaite, et al.

In light of the above, claims 1-18 are therefore believed to be patentable over Delaite, et al. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

5. DOUBLE PATENTING REJECTION

Applicant kindly requests the Examiner to hold the provisional double patenting rejection to co-pending Application Serial No. 10/517,588 in abeyance since neither application has issued as a patent.

CONCLUSION

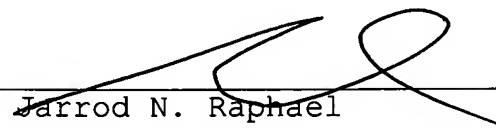
Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the references of record. The Examiner is therefore respectfully requested to reconsider and withdraw all rejections and allow all pending claims 1-18. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

The Examiner is welcomed to telephone the undersigned practitioner if he has any questions or comments.

Serial No. 10/517,580

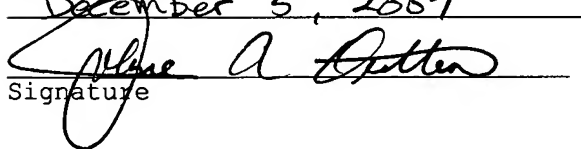
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Date